LIVERMORE-PLEASANTON BART EXTENSION STUDY

FINAL REPORT

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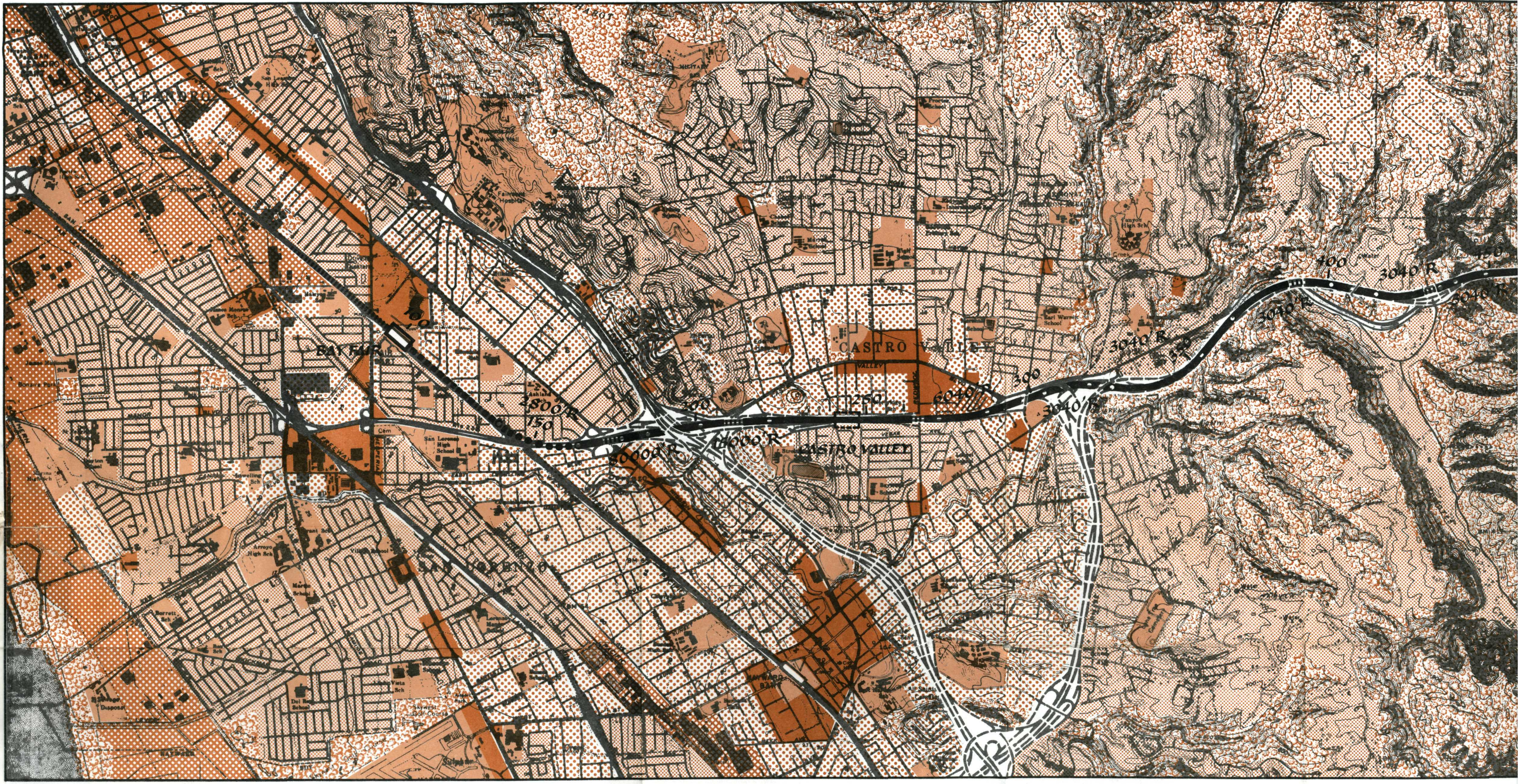
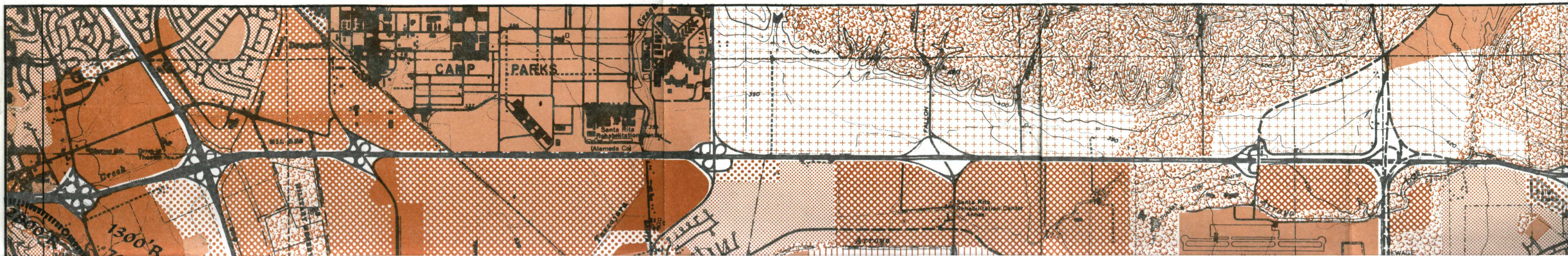
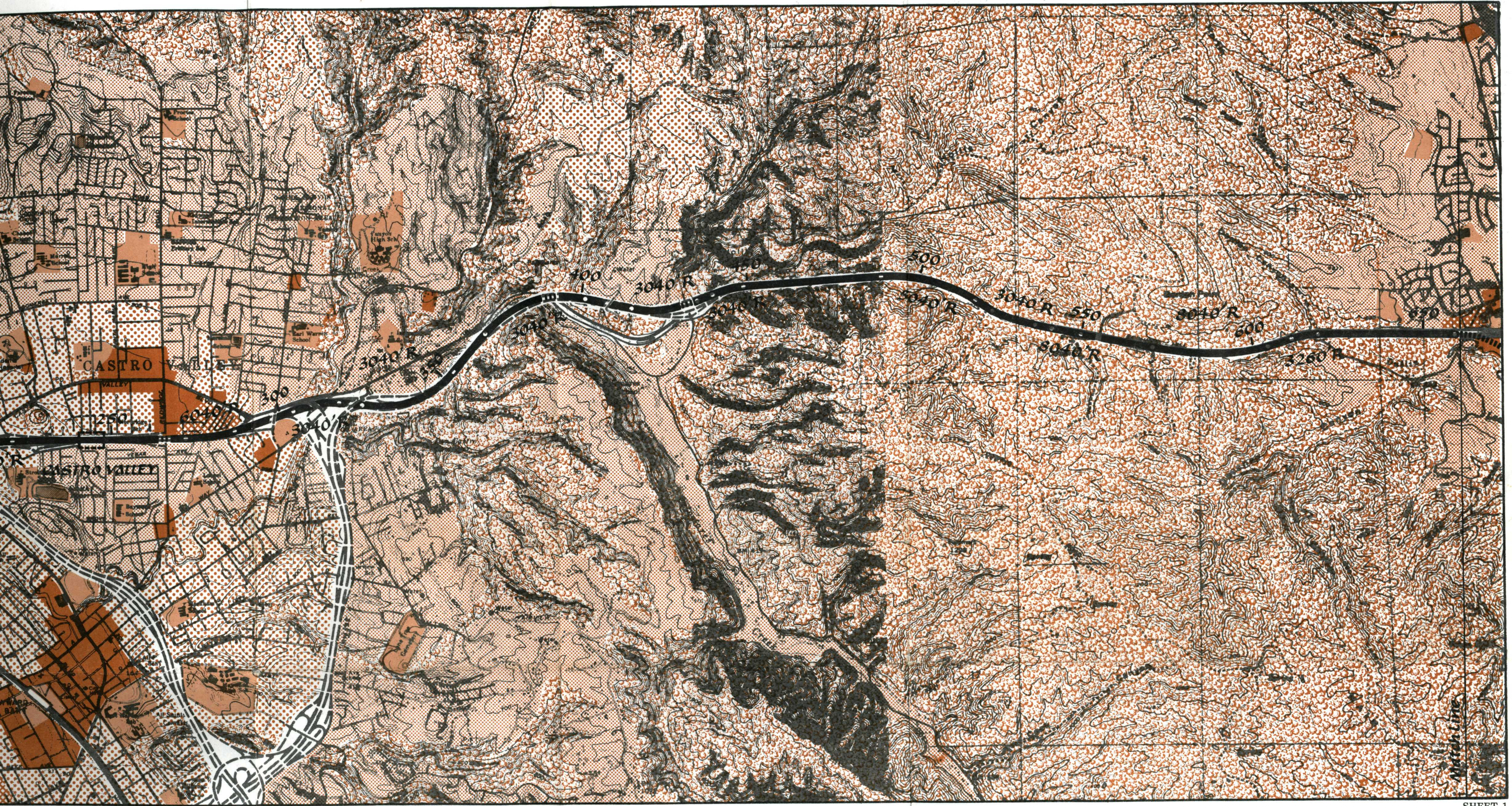
Prepared for LIVERMORE-PLEASANTON BART EXTENSION BOARD

LIVINGSTON AND BLAYNEY, CITY AND REGIONAL PLANNERS, SAN FRANCISCO
DE LEUW, CATHER & COMPANY, ENGINEERS, SAN FRANCISCO
A Joint Venture for Livermore-Pleasanton BART Extension Planning and Conceptual Engineering

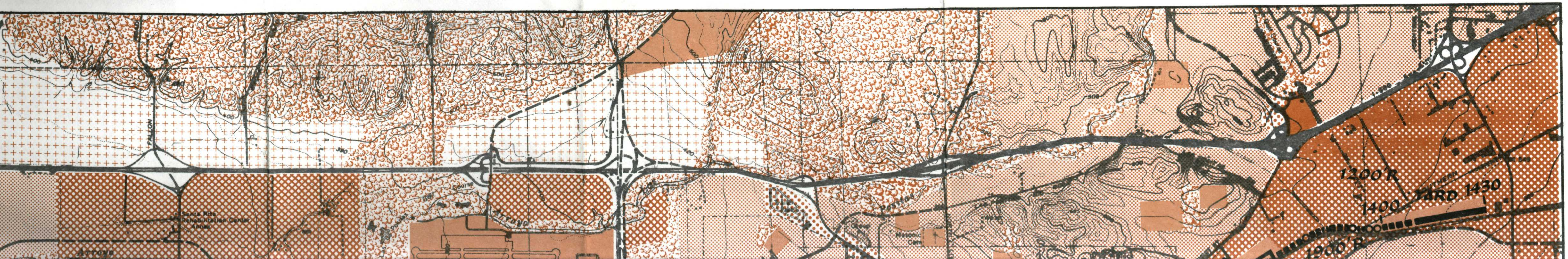
Freebairn-Smith and Associates, Planning, Urban Design, Architecture
Keyser/Marston and Associates, Economists
Gruen Gruen + Associates, Sociological Consultants
William Goldner, Urban Economic Consultant
Robert H. Twiss, Environmental Planning
Woodward-Clyde Consultants, Consulting Engineers and Geologists


SAN LEANDRO
BAY FAIR
CASTRO VALLEY
CASTRO VALLEY
SAN LORENZO
HAYWARD BART
1800'R
150
200
250
300
400
3040'R
3040'R
3040'R
3040'R
6040'R
8000'R
10000'R
Fairmont Hospital
Canyon High Sch
Arroyo High Sch
San Lorenzo High School
FREEWAY

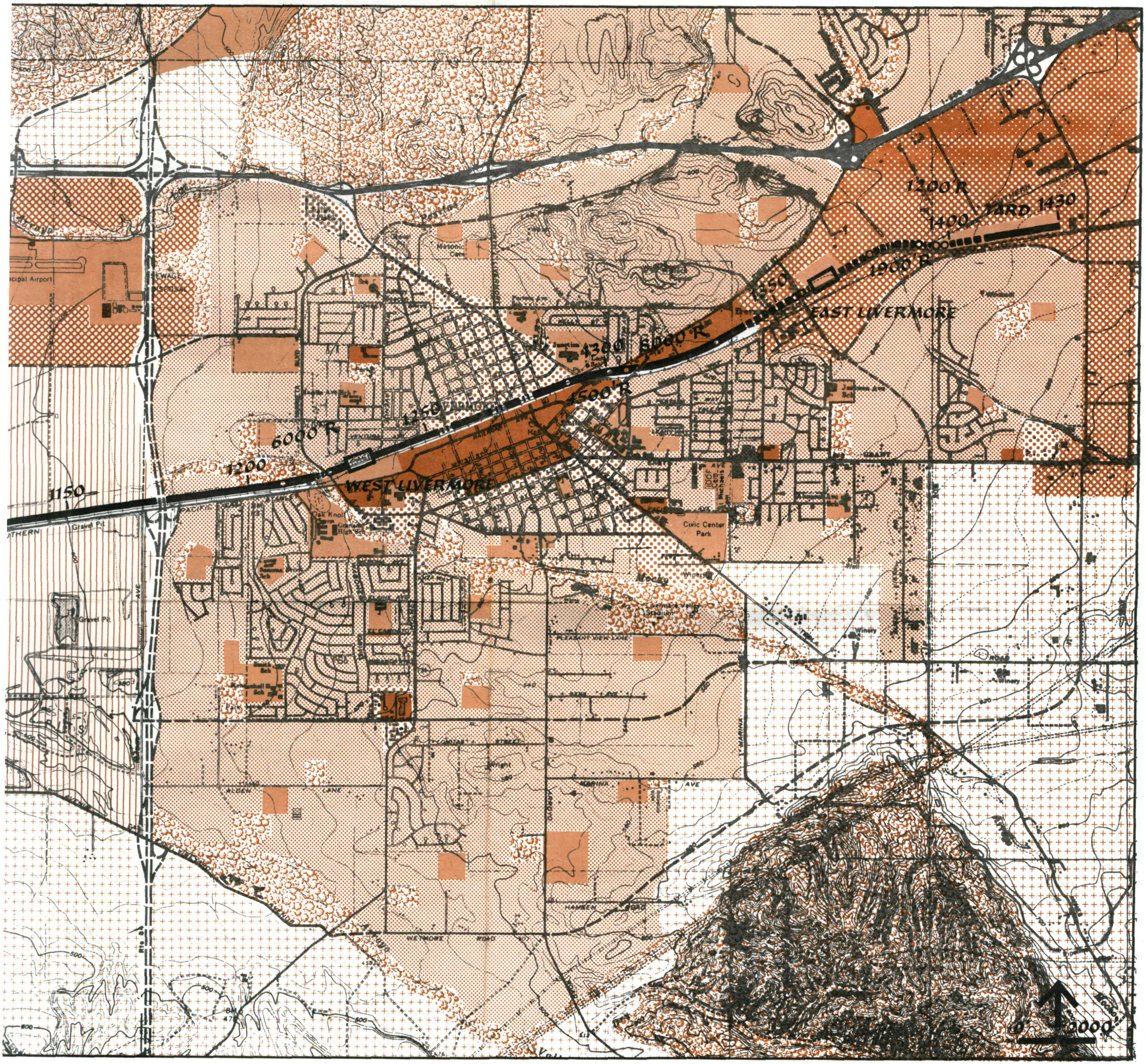

CAMP PARKS
Santa Rita Rehabilitation
(Alameda Co)
1300'R
2800'R
350


CASTRO VALLEY
CASTRO VALLEY
Canyon High Sch.
260
300
6040'R
3040'R
550
3040'R
3040'R
400
3040'R
450
3040'R
500
3040'R
3040'R
550
3040'R
3040'R
600
3260'R
650
Match Line

SHEET 1


1200'R
1400
YARD
1430

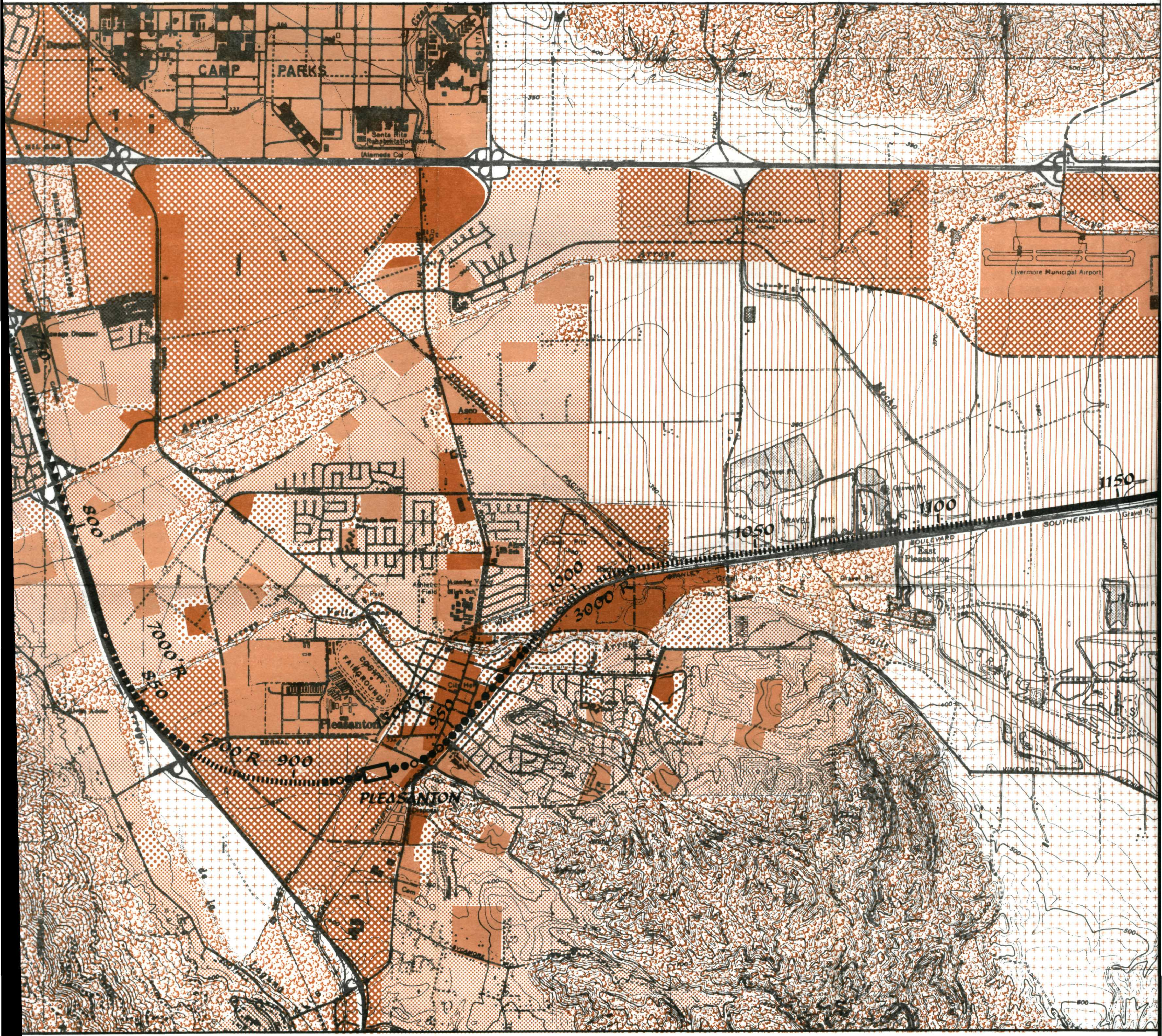
SHEET 1



SHEET 2

Livermore-Pleasanton BART Extension Study

Selected BART Line and Composite General Plans, 1990



Note: Castro Valley Station site assumed for cost estimating and impact analysis, further studies are recommended.

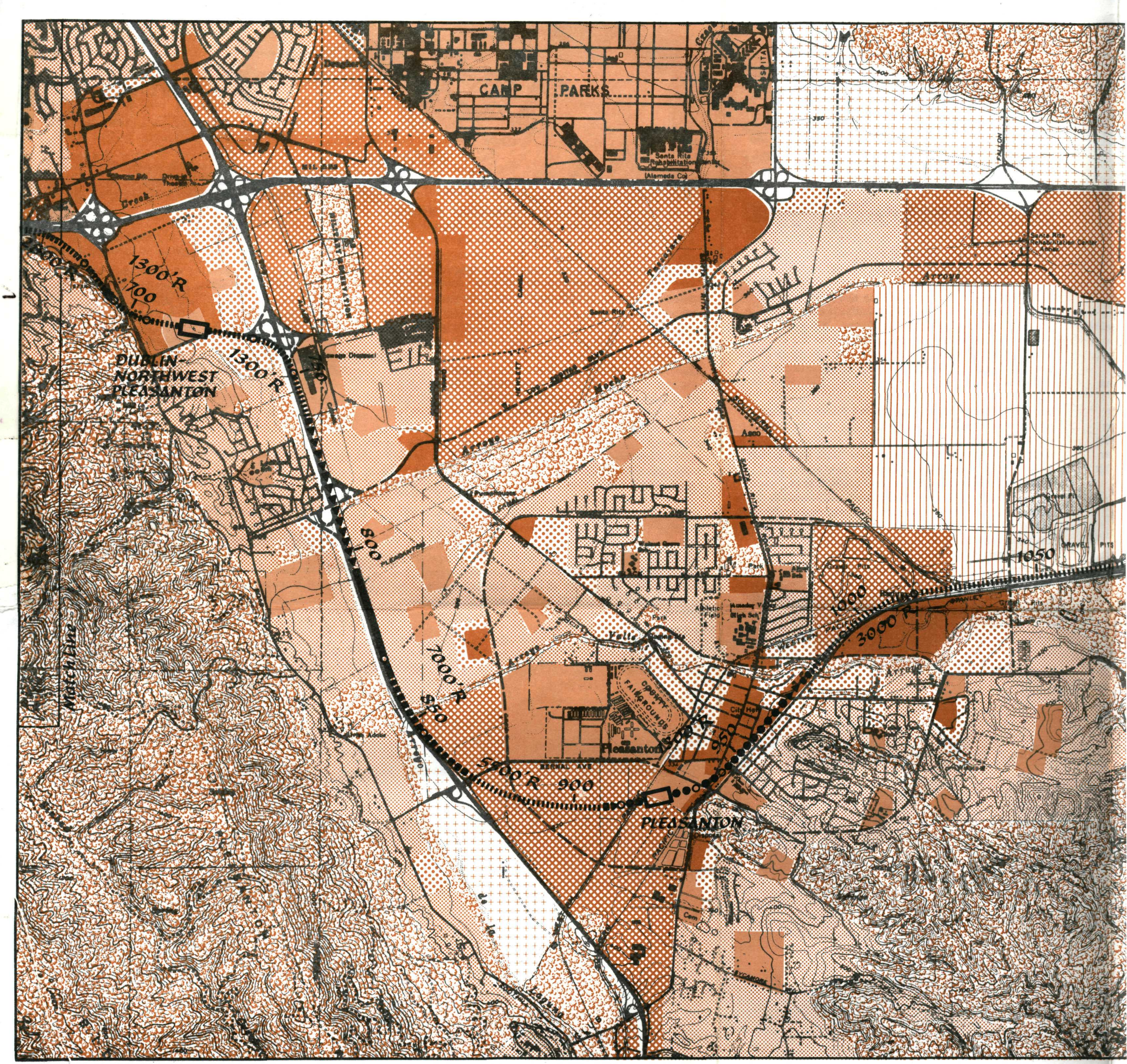
|||||| AERIAL STRUCTURE

▪▪▪ EMBANKMENT

▬ AT GRADE

▸▸▸ DEPRESSED

••• SUBWAY



▨ COMMERCIAL

▨ INDUSTRIAL

▥ SAND AND GRAVEL

▨ PUBLIC AND INSTITUTIONAL

▨ SINGLE FAMILY RESIDENTIAL

▨ MULTI-FAMILY RESIDENTIAL

✚ AGRICULTURE

▨ OPEN SPACE AND PARKS

Note: Castro Valley Station site assumed for cost estimating and impact analysis, further studies are recommended.

┅ AERIAL STRUCTURE

▪▪▪ EMBANKMENT

━ AT GRADE

▸▸▸ DEPRESSED

••• SUBWAY

ute and stations shown on the reverse of this
ry were selected by the Livermore-Pleasanton
Extension Board after a thorough study of alter-
s for bringing BART rail service to the
ore-Amador-San Ramon Valley.

ummary highlights the findings of a lengthy
al report that describes and illustrates more
he process leading to the selection of the route,
ts, benefits, and environmental impacts of
tives studied, and the pros and cons of a BART
tension vs. an express bus alternative.

SE OF THE STUDY

growth of the commuter population since 1960
ed with severe air pollution creates the need
ansit link that will make the Livermore-
r-San Ramon Valley an integral part of the
75 mile, three county system. Valley taxpayers
een paying their share of the costs of the initial
with the expectation that they soon will share
the benefits. The express bus service to
Bay Fair Station that began late in 1974, is
al step.

esent study, started in 1972, has been con-
by a team of planning and engineering con-
s and the BART staff under the direction of the
ore-Pleasanton BART Extension Board of Con-
nposed of three members of the Metropolitan
ortation Commission (MTC), 4 BART directors,
city managers of Pleasanton and Livermore.
nical Advisory Committee and a Citizens'
ry Committee reviewed progress at frequent
ls and made recommendations to the Extension

rpose of the study was to identify and evaluate
tive routes for the extension of BART to Pleas-
nd Livermore. Alternative corridors connec-
the present BART system and routes in the
ore-Amador-San Ramon Valley were analyzed
omprehensive evaluation of their engineering
ity, cost, patronage, and environmental impact
pared.

route had been selected by the Board follow-
lic hearings on alternatives, conceptual en-
ng, including plans and line profiles, schem-
tion site plans and support facility plans, and
imates were completed. This detailed system
g is intended to present sufficiently accurate
tion for a final decision on the technical merits
vice characteristics of a Livermore-Pleasanton
xtension. To place the rail transit extension
pective, a systematic comparison with a bus
ive was included.

SETTING

In 1972, the Valley population was 100,000, and barring a prolonged economic downturn or stringent anti-growth restrictions, it will increase to a range between 178,000 and 227,000 by 1990 (143,000 to 185,000 for the Alameda County portion alone). As many as 44,000 Valley residents will commute out of the Valley to work (30 percent bound for Oakland and San Francisco), while 18,000 people will commute into the Valley, and 36,000 Valley residents will hold local jobs. Today, about three quarters of travel outside the Valley is through the Dublin Canyon corridor.

Currently, 90 percent of the Valley's households occupy single family homes. Most commuters chose to live there because they were willing to trade a relatively long journey to work for a new single family home in a community comprised largely of families like themselves. There is a strong desire to preserve open space, although the threat of wall-to-wall city is not immediate. If the present low-density housing pattern were to continue, only 39 to 45 percent of the Valley's buildable land would be urbanized by 1990. The sharp rise in housing costs of the last several years suggests that many, if not most, newcomers may be unable to afford single family detached homes, so per capita land consumption is likely to decline.

REGIONAL AND VALLEY PLANNING ISSUES

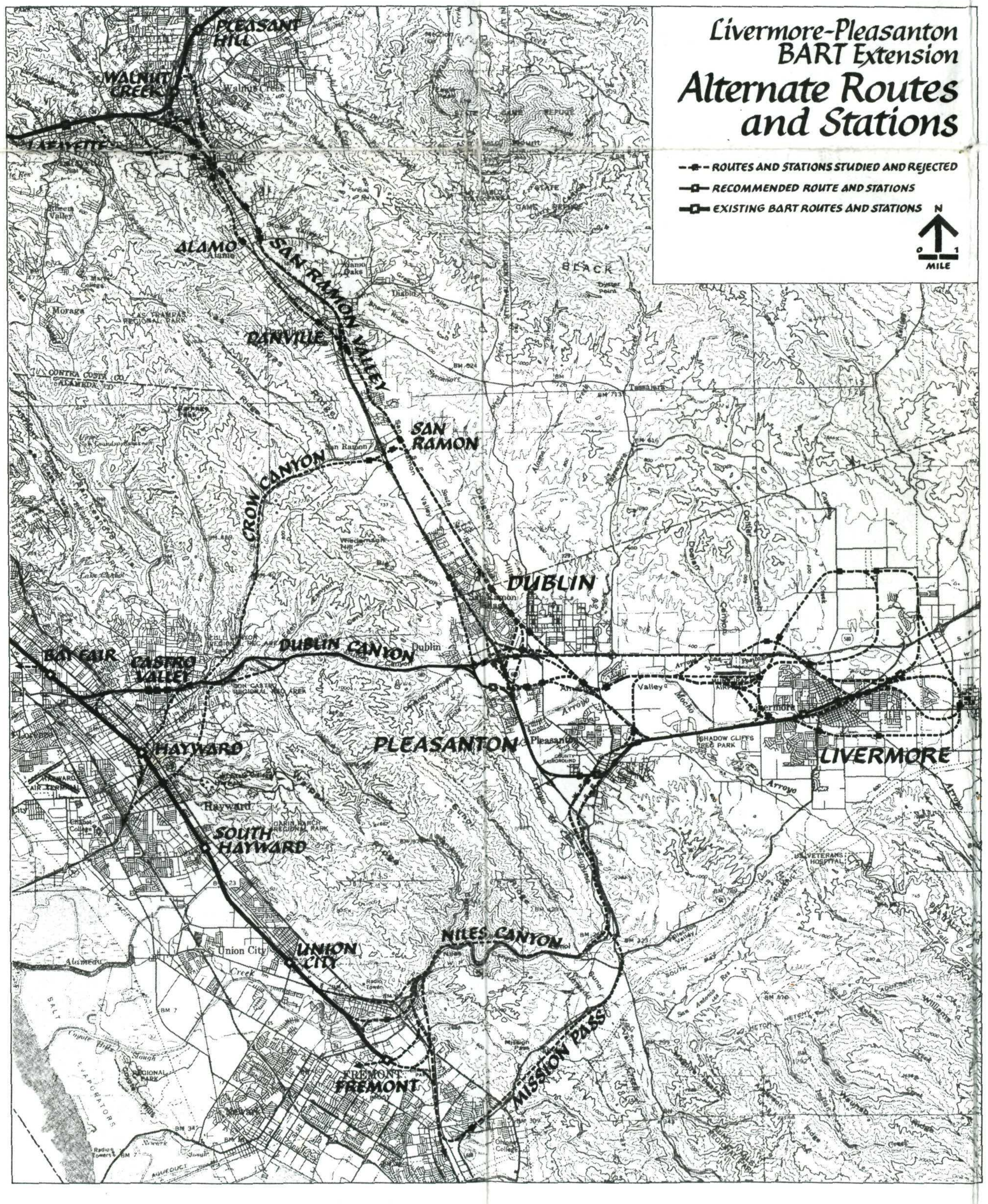
Because transit is best suited for carrying employees in a well defined travel corridor to areas of high employment concentration within walking distance of a station, BART tends to reinforce the existing regional office centers — San Francisco and, to a lesser extent, Oakland. It appears unlikely that large, concentrated subcenters will develop at Walnut Creek or Fremont, for example, unless there are severe constraints on automobile use and overloads on existing transit serving core areas. Some employers will locate near outlying BART stations, usually with no reduction in the amount of parking provided, so BART would offer little incentive for these employees to leave their cars at home. If regional policy were to use BART to exert maximum influence on the distribution of jobs, it might be necessary to build rail extensions that would have a much higher cost per passenger carried than alternatives more closely fitting predictable travel desires and oriented toward San Francisco and Oakland. This study found no net regional benefit that would justify connecting the Valley with a subregional center in an effort to decentralize office employment in the Bay Area.

Concern about the effect of growth on air quality is the principal environmental issue in the Valley because air pollution has been more severe than in most other parts of the Bay Area. Combined with this is the widespread wish to reduce population growth and to preserve open space found in most California communities on the fringes of major metropolitan areas. Inability to expand school classroom and sewage treatment capacities in pace with demand has made Valley residents particularly growth conscious. These feelings conflict with the desire for BART service, and many Valley residents interviewed during this study would reject BART if they believed it would accelerate growth or stimulate apartment construction. To establish the probable dimensions of BART's potential impact on the amount and form of urban development and the amount of vehicle travel, the study examined a wide range of reasonable growth and transit usage assumptions. The conclusion was that BART could bring moderate, but significant reductions in the amount of land urbanized and in the use of automobiles. This would result mainly from an increase in the share of high density housing and from concentration of new apartments near BART stations.

More detailed study was given to the possibility of a connection to Walnut Creek that would add a station in the business district and enhance the city's ability to attract regional offices in competition with Oakland and San Francisco. The benefit would be shortened commute trips and a reduction in total regional travel. However, patronage studies indicated that the Valley's well-established employment orientation toward Hayward, San Leandro, Oakland, and San Francisco would be difficult to change. Even assuming that downtown Walnut Creek employment would increase from 10,000 now to 35,000 in 1990 rather than the 1990 trend forecast of 22,000, a San Ramon BART line would attract only 60 percent of the patronage of a Dublin Canyon line. If 50 percent of Walnut Creek's additional employees were Valley residents and 35 percent used BART to get to work, they would account for only 4,100 daily trips. The much larger number of Valley residents who would have to spend a half hour longer each day to reach their destinations

ing events at the fairgrounds, would establish the importance of the new civic center and attract office development nearby, would connect downtown Pleasanton with downtown Livermore, and could bring consolidation of Pleasanton's two railroads into a single right of way.

The West Livermore Station site located at Stanley Boulevard and Murrieta Boulevard was selected over an outlying station site on Portola Avenue near the I-580 freeway and a downtown site on the Western Pacific tracks between "L" Street and North Livermore Avenue because it would create less congestion and would cause patronage to be shared more evenly with the East Livermore Station. More commuters live near the West Livermore Station site now, and it has the greatest potential for both commuter-oriented housing and jobs within walking distance. In comparison with the outlying site, a BART line serving the selected West Livermore Station would cause less disruption in Livermore and would reduce the home to station travel time for Livermore BART patrons by 10 percent.



distance residential population would be 650 and there would be 1,400 jobs.

BART then would enter a cut-and-cover subway
under the present Southern Pacific tracks, emerg
north of Ray Street to cross over Arroyo del Valle
An aerial structure through downtown Pleasanton
would cause too much noise and visual disruption
while the cost of a bored tunnel under the existin
Southern Pacific tracks would be about the same
for relocation of the Southern Pacific tracks to the
present Western Pacific right of way. Relocation would make downtown land available for othe
uses and would allow underpasses (not feasible a
present Southern Pacific location) to be built for
railroads.

Between Pleasanton and Livermore BART would p
allel the railroads on the north side, remaining or
aerial structure past the gravel pits to allow rail
sidings and then running at grade. The West Liv
more Station, just east of Murrieta Boulevard and
south of the relocated Southern Pacific tracks, wo
be reached from Stanley Boulevard and Murrieta
Boulevard. A 1990 population of 1,400 and 1,500
would be within walking distance. The Livermore
railroad consolidation project currently underway
will relocate the Southern Pacific tracks to the We
ern Pacific right of way between Murrieta Bouleva
and the point in east Livermore where the tracks
ready adjoin. Underpasses are being built at Nor
Livermore Avenue and North "P" Street.

Through Livermore BART is planned to run at gra
along the north side of the Western Pacific tracks,
requiring completion of railroad consolidation and
elimination of all grade crossings. Placing BART
aerial structure or in a subway still would leave t
two mainline railroads at grade. A better solution
would be to spend the money "saved" for additiona
undercrossings of all three rail lines and for landscaped berms that would be visual and acoustic
barriers.

East of a proposed overpass at First Street BART
would continue at grade or on embankment to the
Livermore Station east of Mines Road extension.
surrounding area is designated primarily for indu
trial use and would have 2,000 jobs and 250 reside
in walking radius in 1990. A yard for train storag
and routine maintenance 4,000 feet east of the stati
would end the 24 mile extension.

The five stations on the selected line would be on
sites of 11 to 24 acres and would provide all day pa
ing for half of the anticipated 1990 daily patronage
local bus system would serve a quarter of the daily
patrons, and the remainder would be dropped off,
walk, or ride bicycles.

Patronage

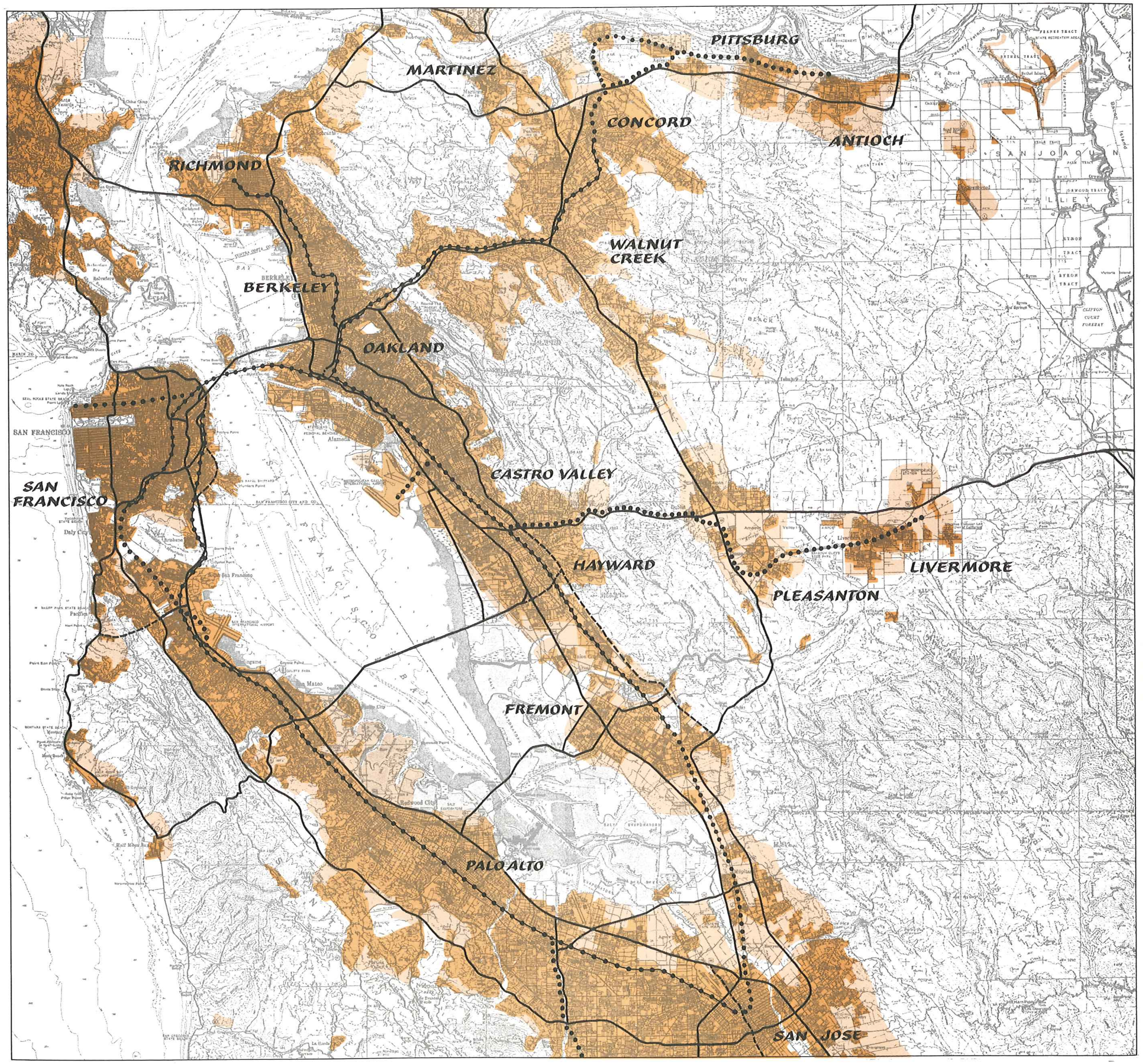
Patronage studies by BART and MTC project 36,30
daily trips in 1990 on a line connecting the Valley t
Bay Fair Station, including 34,000 through Dublin
Canyon. Of these, about three quarters would be
trips to and from work. Maximum 1990 patronage f
a Valley extension from the Concord BART Line at
Walnut Creek would be 22,000.

Costs

The total capital cost of the extension is estimated a
$370 million (1974 dollars). Right of way would co
about $25 million, construction including related
public improvements $245 million, and rolling stock
$36 million, with over $60 million allowed for conti
gencies. The BART staff estimates 1990 operating
costs at $7.5 million or $0.69 per passenger-trip an
1990 revenues at $6.4 million or $0.59 per passenge
trip for the extension portion of the trip.

Regional Development

MAP BASED ON ASSOCIATION OF BAY AREA GOVERNMENTS REGIONAL PLAN DIAGRAM AND METROPOLITAN TRANSPORTATION COMMISSION REGIONAL TRANSPORTATION PLAN



🟫 1970 DEVELOPED SPACE

▨ 1990 DEVELOPED SPACE

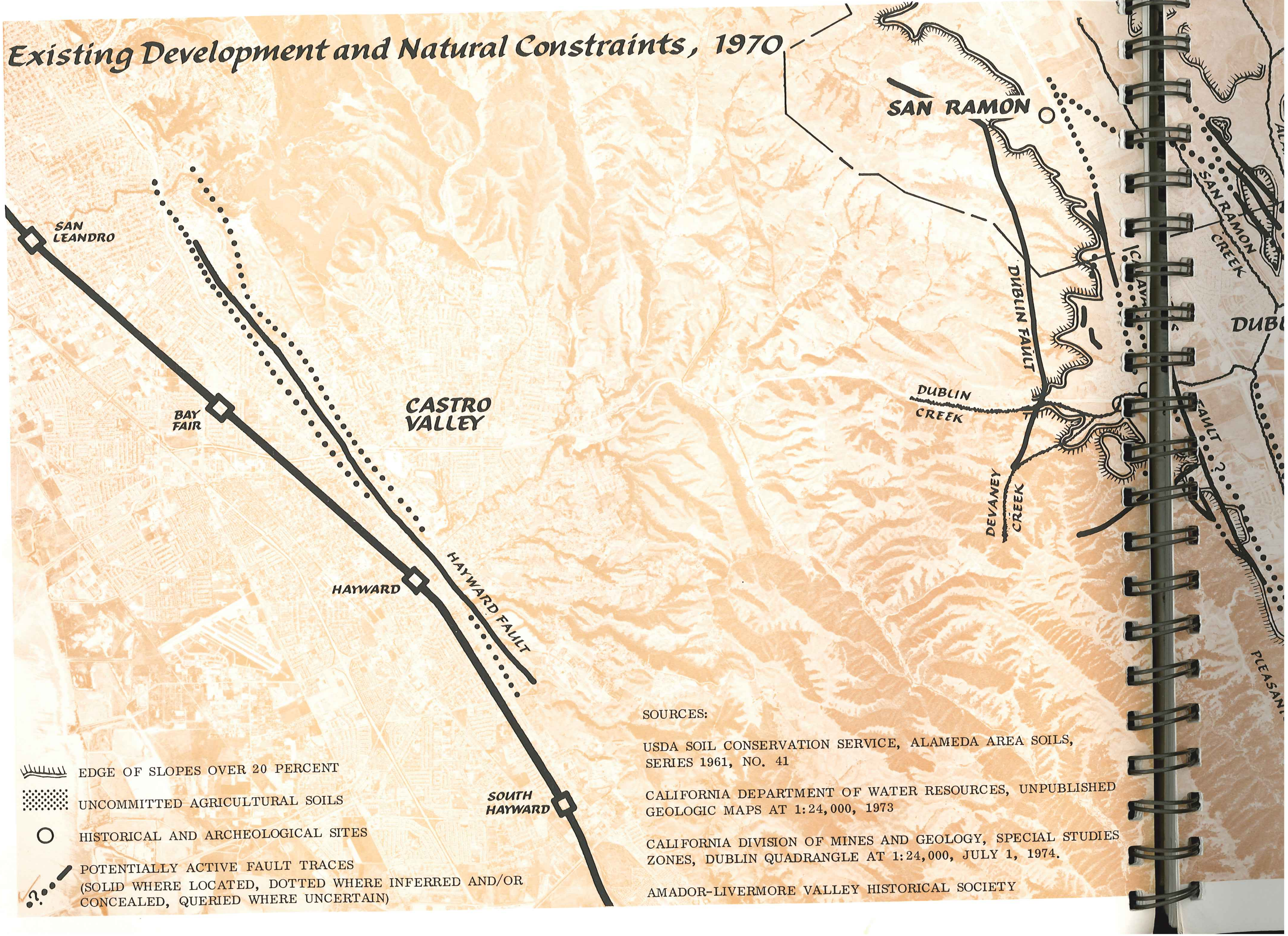
— REGIONAL HIGHWAYS

— — — CORRIDORS UNDER STUDY

-●●●●- REGIONAL RAIL TRANSIT

●●●● RAIL TRANSIT EXTENSIONS UNDER STUDY

Existing Development and Natural Constraints, 1970



EDGE OF SLOPES OVER 20 PERCENT

▨ UNCOMMITTED AGRICULTURAL SOILS

○ HISTORICAL AND ARCHEOLOGICAL SITES

POTENTIALLY ACTIVE FAULT TRACES
(SOLID WHERE LOCATED, DOTTED WHERE INFERRED AND/OR CONCEALED, QUERIED WHERE UNCERTAIN)

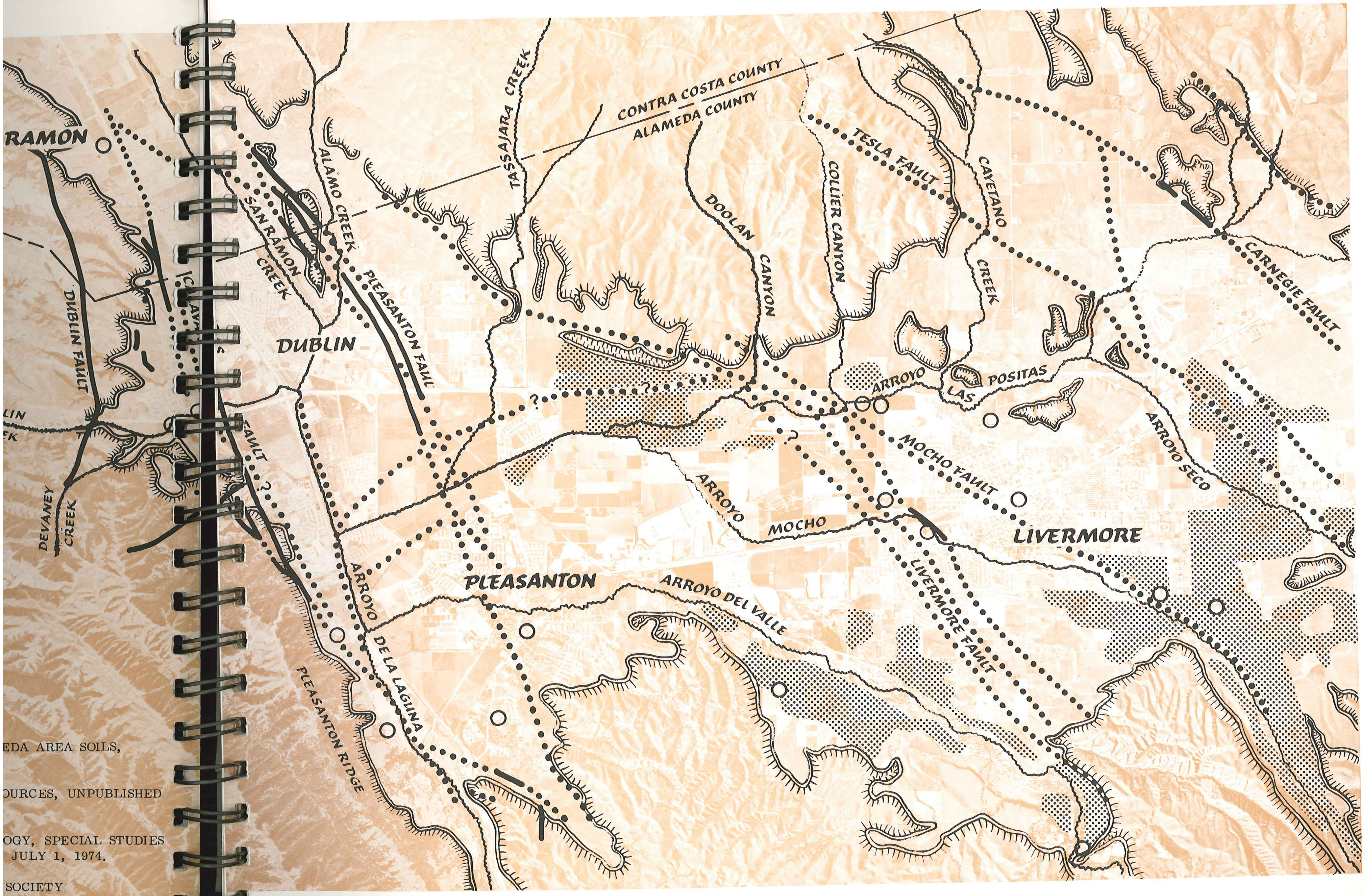
SOURCES:

USDA SOIL CONSERVATION SERVICE, ALAMEDA AREA SOILS, SERIES 1961, NO. 41

CALIFORNIA DEPARTMENT OF WATER RESOURCES, UNPUBLISHED GEOLOGIC MAPS AT 1:24,000, 1973

CALIFORNIA DIVISION OF MINES AND GEOLOGY, SPECIAL STUDIES ZONES, DUBLIN QUADRANGLE AT 1:24,000, JULY 1, 1974.

AMADOR-LIVERMORE VALLEY HISTORICAL SOCIETY



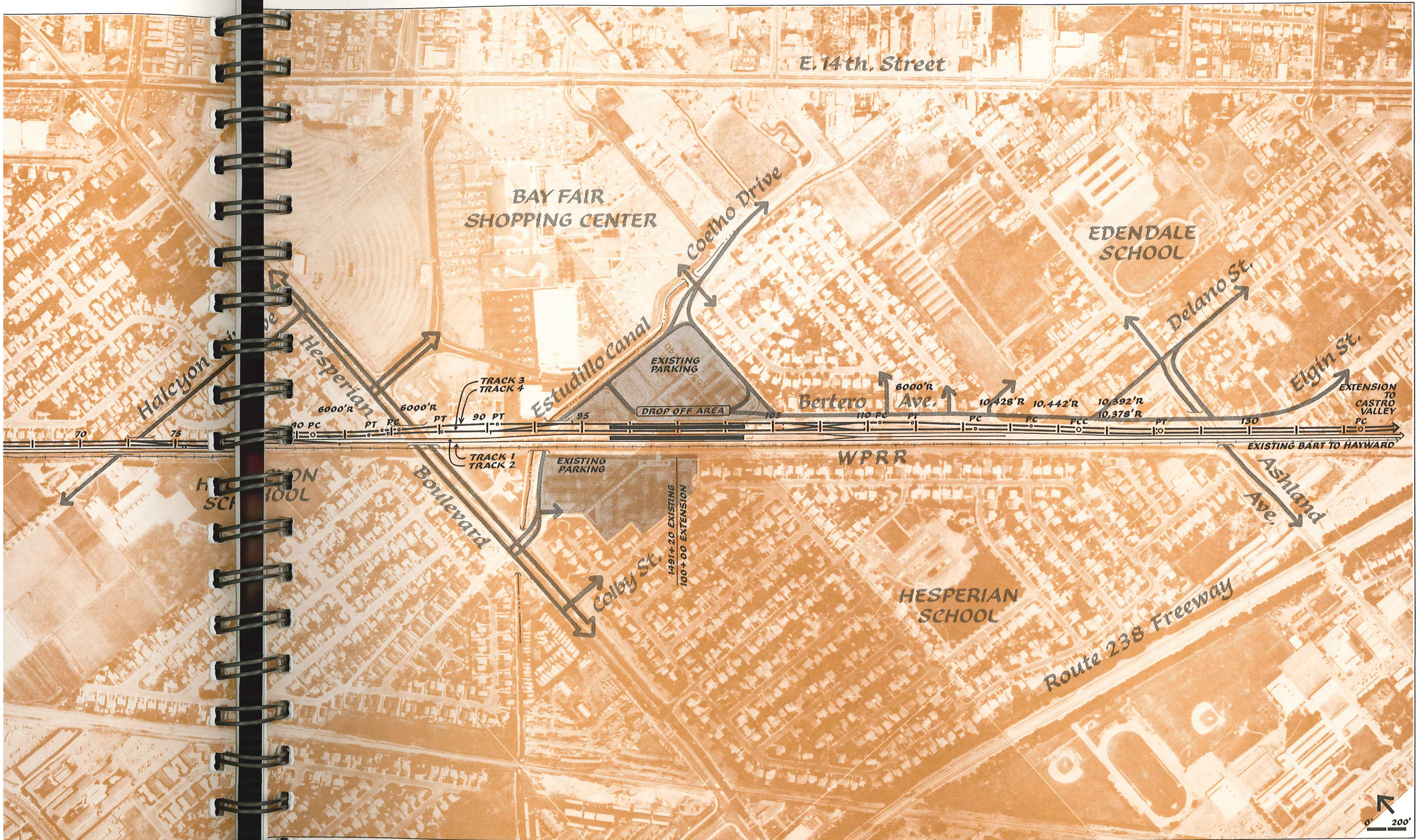
EDA AREA SOILS,

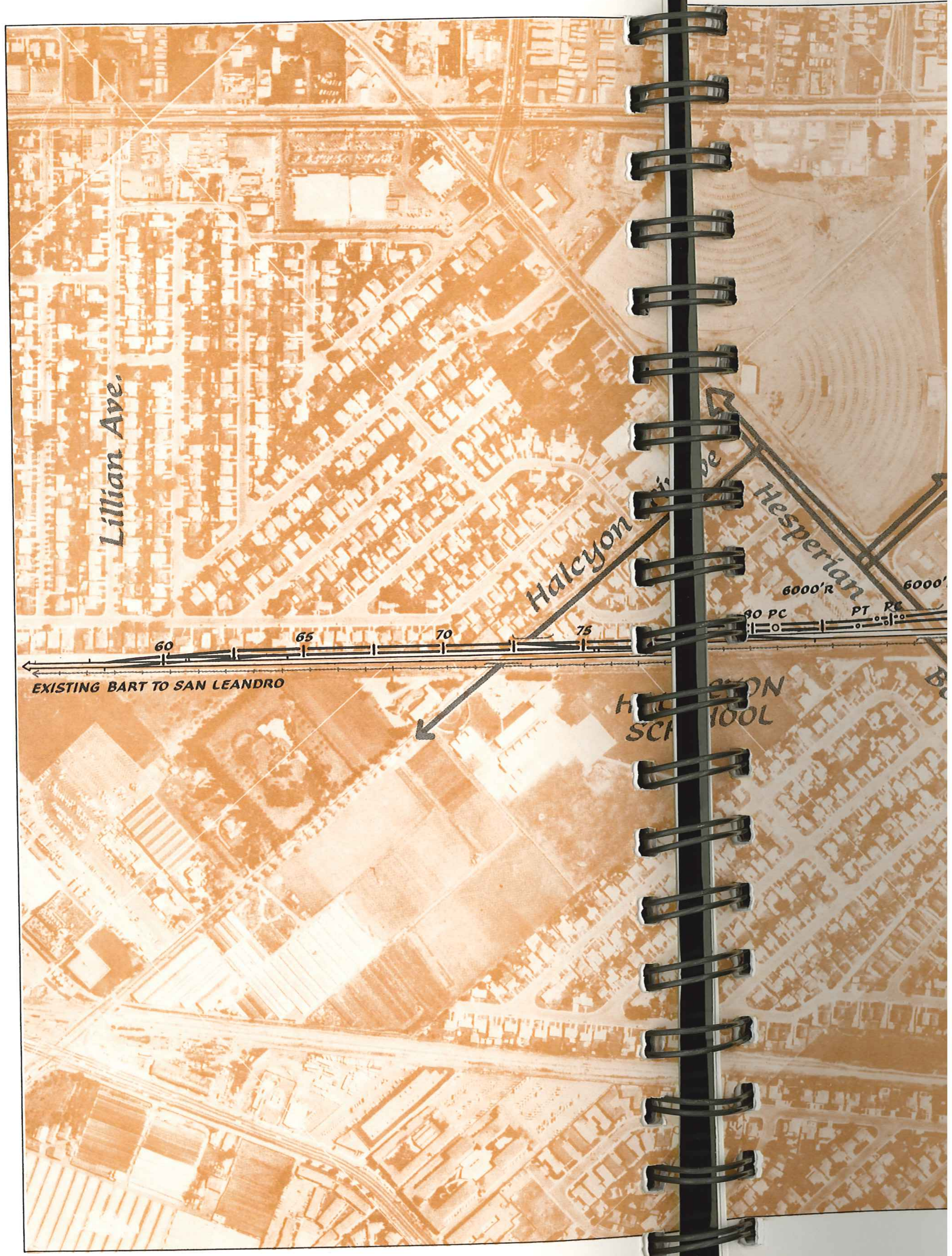
OURCES, UNPUBLISHED

OGY, SPECIAL STUDIES
JULY 1, 1974.

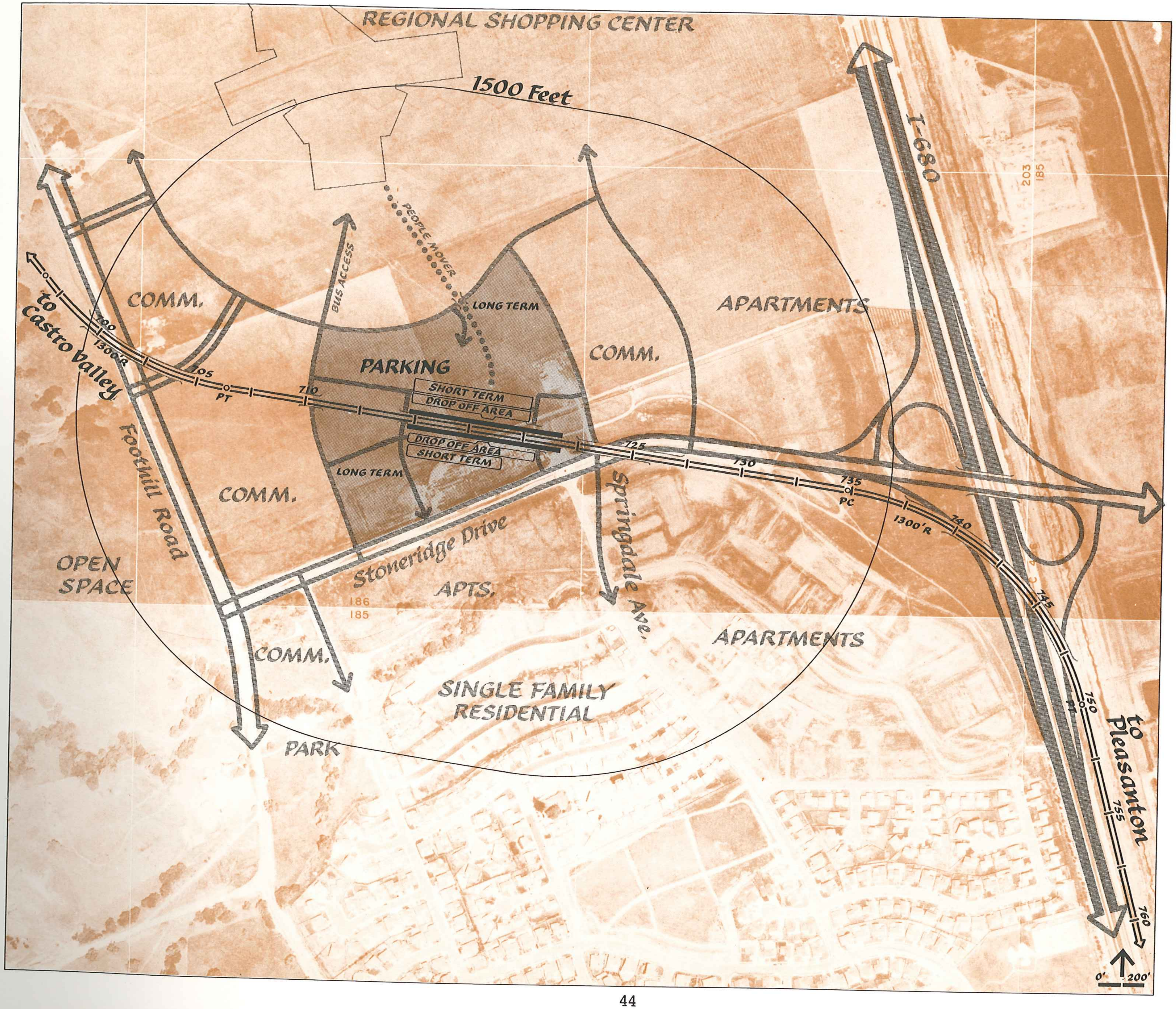
SOCIETY

Bay Fair Station Schematic Site Plan

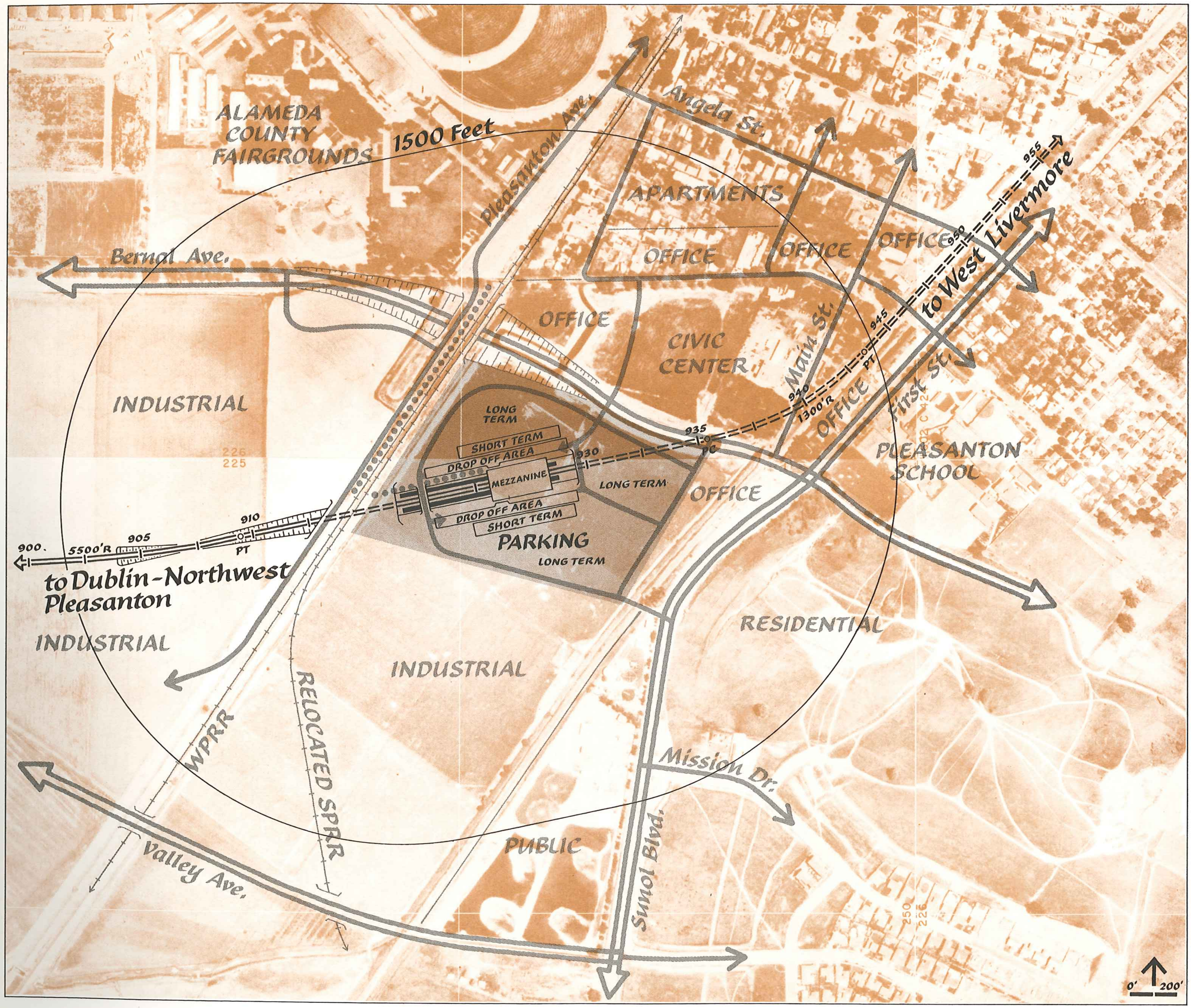



Lillian Ave.
Halcyon
Hesperian
6000'R
6000'
80 PC
PT
PC
60
65
70
75
EXISTING BART TO SAN LEANDRO
H
ON
SC
OOL

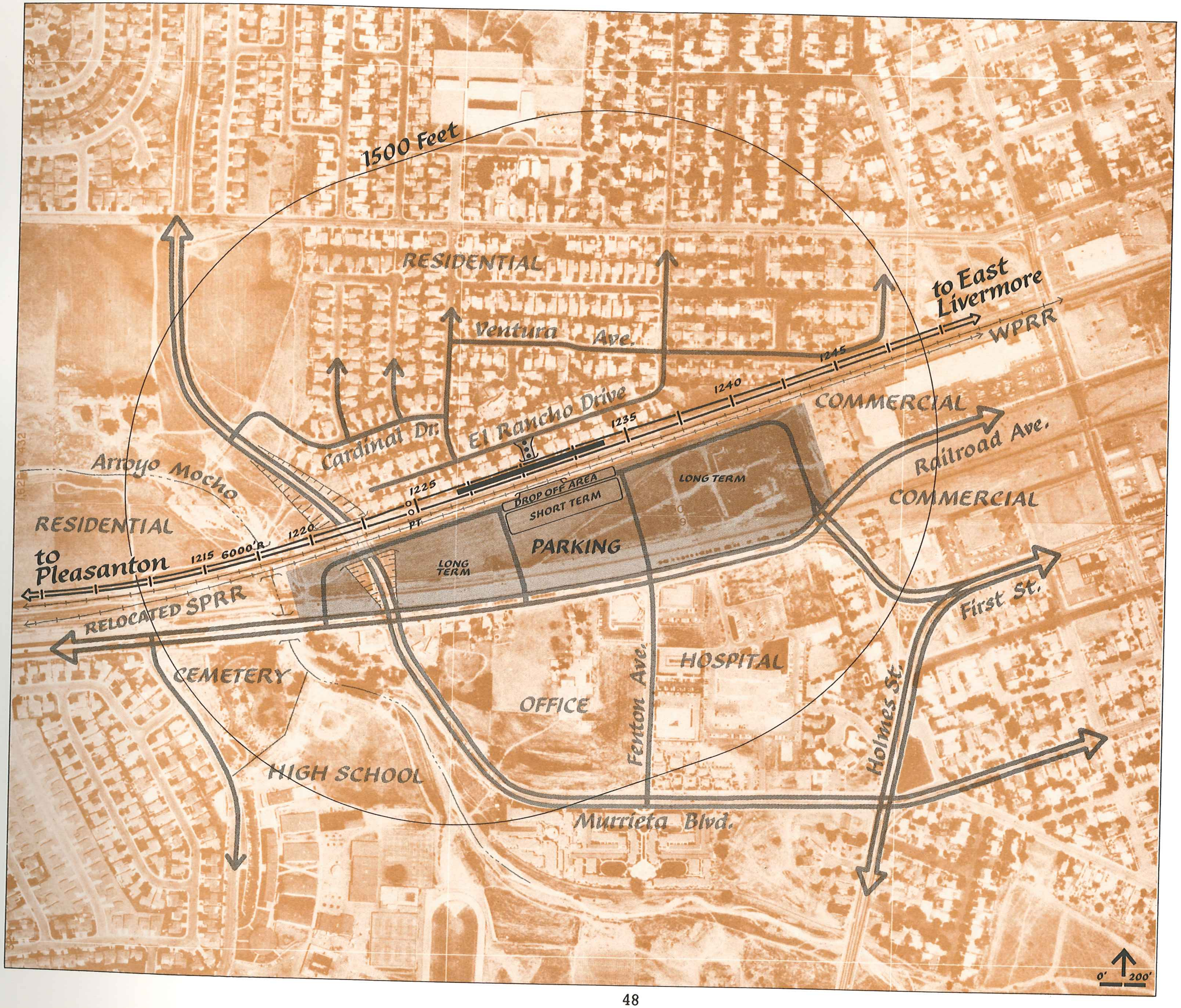
Dublin - Northwest Pleasanton Station Schematic Site Plan



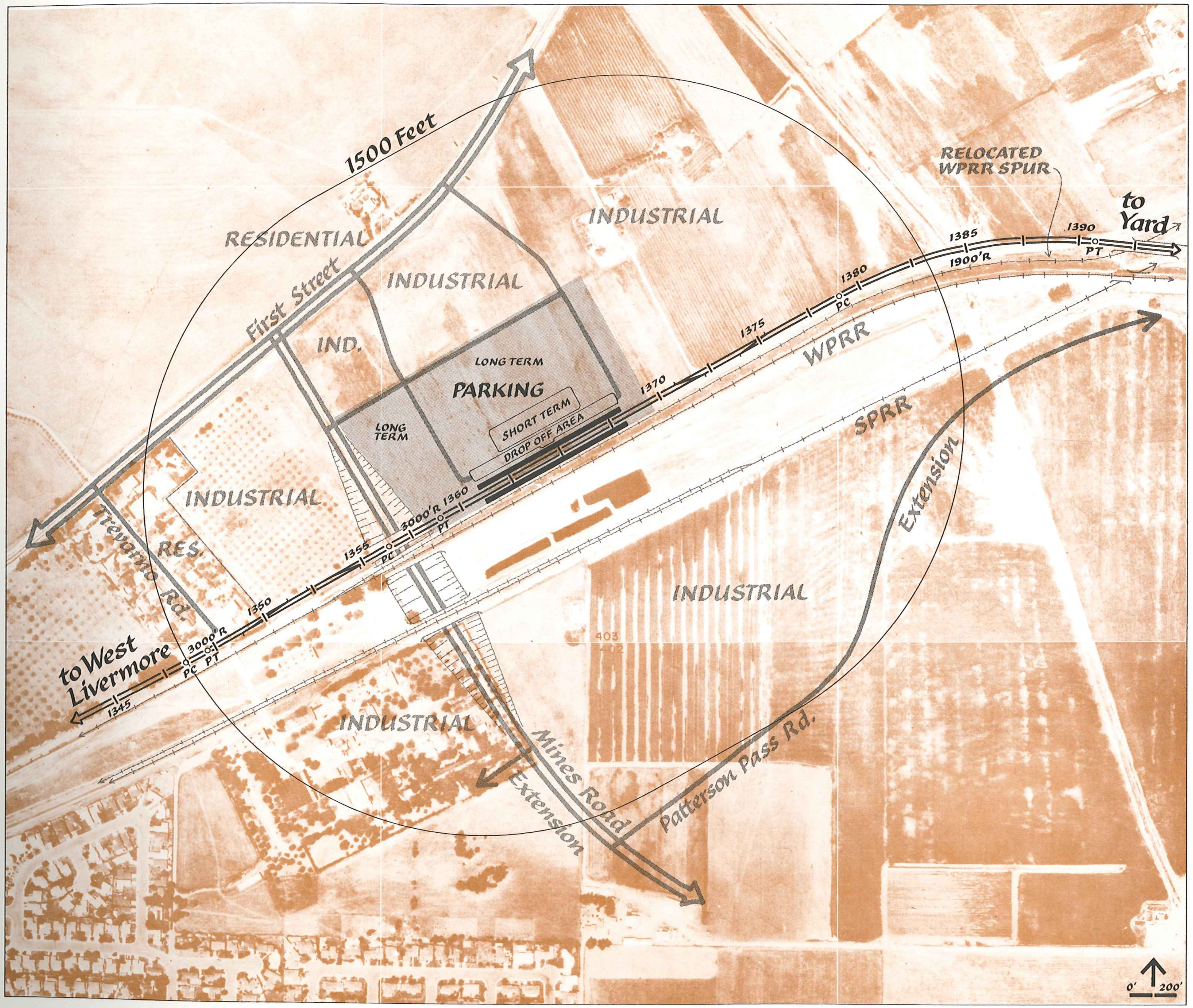
Pleasanton Station Schematic Site Plan



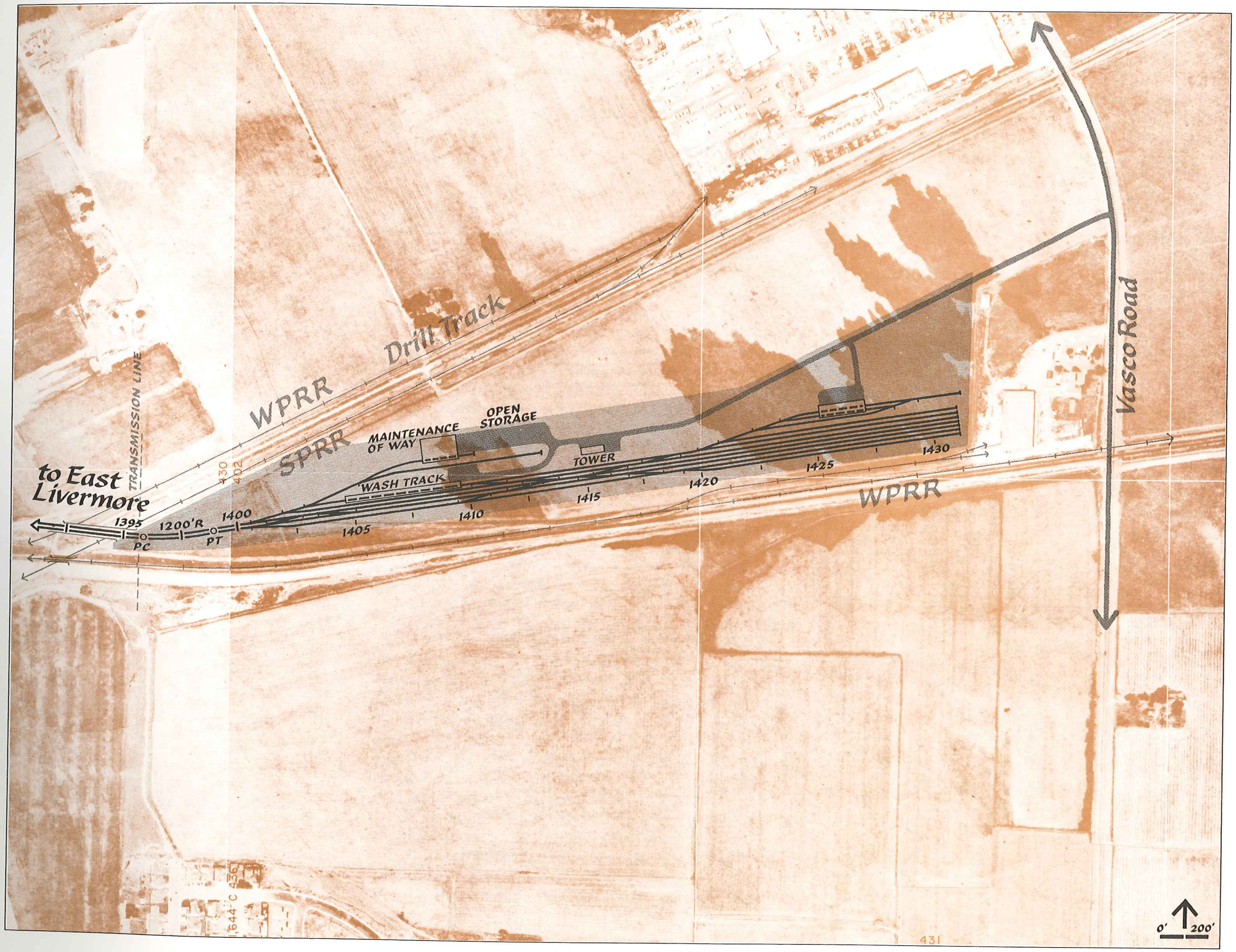
West Livermore Station Schematic Site Plan

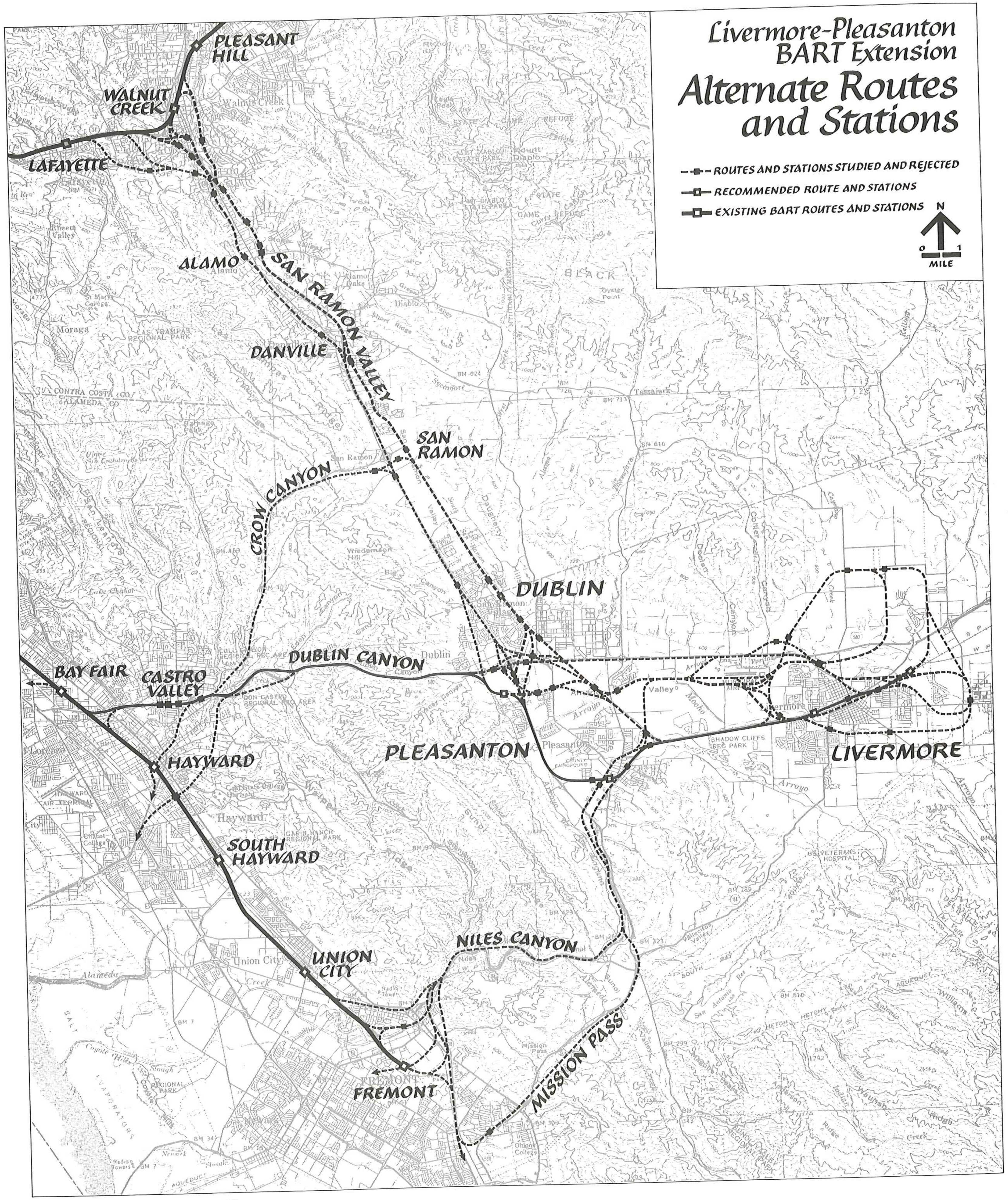


East Livermore Station Schematic Site Plan



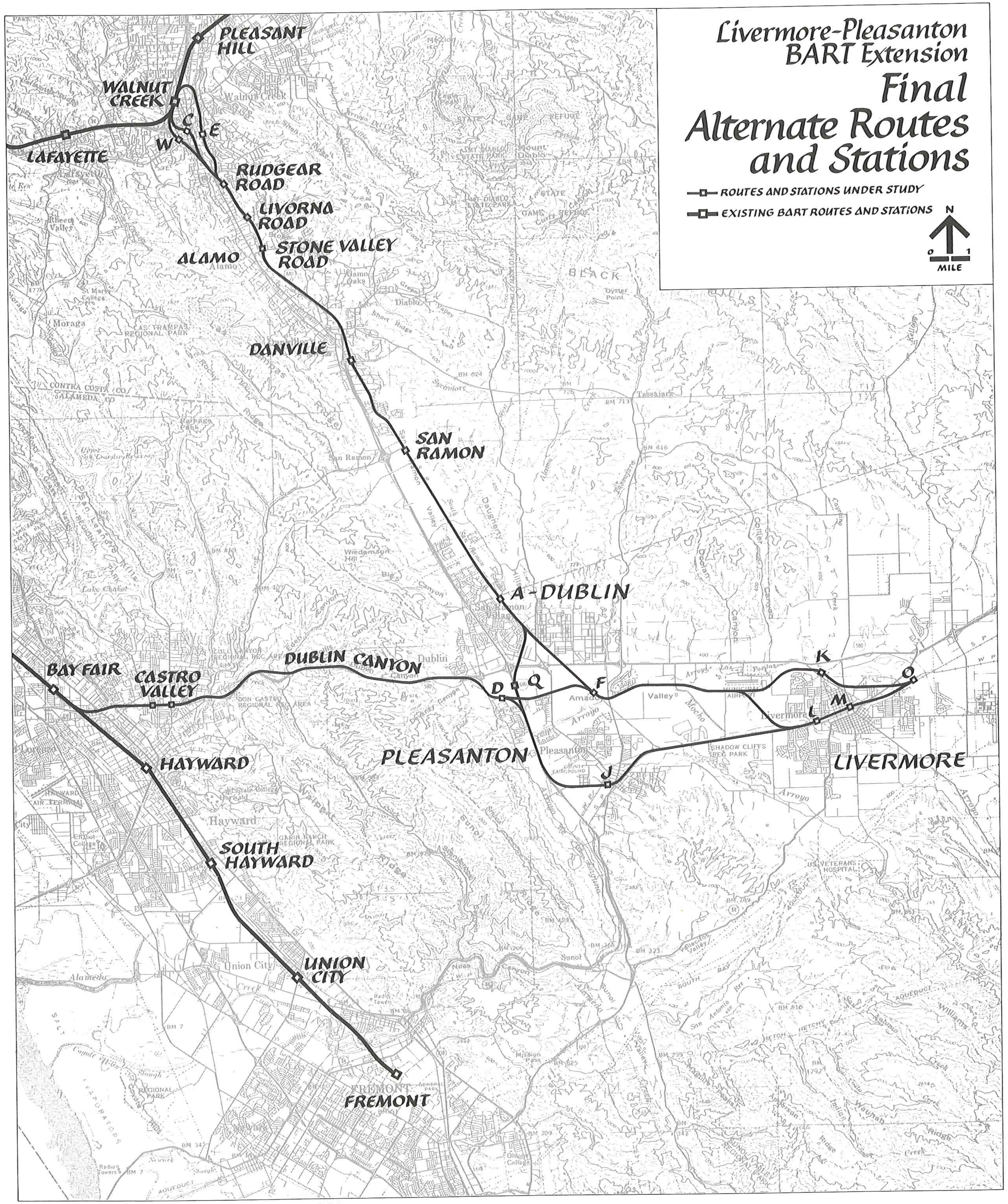
Livermore Yard Schematic Site Plan





Livermore-Pleasanton BART Extension

Alternate Routes and Stations



Livermore-Pleasanton BART Extension

Final Alternate Routes and Stations